

7/13/2018

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Initial Review Exposure Report

Chemical ID:P-18-0169 Reviewer:Motti/ENCID ID-Chemical Identity Issue

Exposure Scenario	Water						Land fill(non-sludge)	Stack		Fugitive	
Release Activity(ies)	Drinking Water		Fish Ingestion								
exposure Calculations	ADR mg/kg/day	LADD mg/kg/day	ADR mg/kg/day	LADD mg/kg/day	7Q10cc 1000 ug/l	PDM Exceeded # Days	LADD mg/kg/day	ADR mg/kg/day	LADD mg/kg/day	ADR mg/kg/day	LADD mg/kg/day
MFG:Max ADR	--	--	--	--	--	--	--	--	--	--	--
MFG:Max LADD	--	--	--	--	--	--	--	--	--	--	--
USE:Max ADR	7.98e-4	--	--	--	--	--	--	--	--	--	--
USE:Max LADD	--	7.85e-6	--	--	--	--	--	--	--	--	--

1. Exposure scenario titles consist of release activity followed by exposure calculation abbreviation.
2. Release activities are from engineering report's Manufacturing (Mfg), Processing (Proc) and Use release activity labels. Multiple release activities are combined in one exposure scenario if their releases occur at same location.
3. Exposure calculations are Acute Dose Rate (ADR), Lifetime Average Daily Dose (LADD), and Probabilistic Dilution Model (PDM). There may be one, two, or all three exposure calculations per exposure scenario. CC is the aquatic concentration of concern.
4. This column displays concentration values for the 7Q10 streamflow, which is defined as the average daily streamflow of the seven consecutive days of lowest flow within a ten year period.

Remarks:

MFG –

USE –

SCALING FACTORS FOR DRINKING WATER DOSE

Age Group	Scaling Factor for ADR	Scaling Factor for ADD
Adults	1.0	1.0
Birth to 1	4.17	11.49
1-2	1.63	3.91
3-5	1.24	3.10
6-10	1.12	2.51
11-15	0.83	1.77
16-21	0.79	1.55
Pregnant	1.02	2.07
Lactating	1.31	3.84

Scaling factors for ADR are based on the ratio of 95th percentile drinking water intake/body weight for each age group compared to the 95th percentile drinking water intake/body weight ratio for adults from Table 3-1 of the 2011 edition of the Exposure Factors Handbook.

Scaling factors for age specific ADD are based on the ratio of the mean drinking water intake/body weight for each age group compared to the mean drinking water intake/body weight ratio for adults from Table 3-1 of the 2011 edition of the Exposure Factors Handbook.

Note, default LADD values are based on assumption that 33 years of lifetime exposure occurs in adulthood. If that exposure starts at birth, the LADD increases by 10% (1.1). However, central tendency duration (13 years) and consideration of age specific adjustment factors (ADAF) can be considered on an as needed basis (LADD Scaling factors range from 0.6 to 4.1).

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

Assessor: Mottl/ENC

ENVIRONMENTAL RELEASES

Scenario#:1

Number of Release Sites: 1.

Release Activity: MFG:Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

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Per Site Release:

	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

CHEMICAL ID: P-18-0169

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES: LAKES, BAYS, ESTUARIES, AND OCEANS		
SCENARIO #: 1	RELEASE ACTIVITY: MFG:Max ADR	
FACILITY NAME: LYNN REGIONAL W P C F		
FACILITY LOCATION: LYNN MA 01905		
RECEIVING WATER NAME: ATLANTIC OCEAN		
REACH NUMBER: 01090001013	FACILITY ON REACH: Yes	DISCHARGE TYPE: Direct
NPDES PERMIT #: MA0100552	EXPOSED POPULATION: Adult	

WWT REMOVAL (%)	RELEASE DAYS	PLANT FLOW (MLD)	PRETREAT RELEASE (kg/site/day)	POST-TREAT RELEASE (kg/site/day)	BCF (L/kg)
90.		149.15			0.00

AQUATIC EXPOSURE ESTIMATES		
MIXING ZONE	DILUTION FACTOR	WATER CONCENTRATION (ug/L)
ACUTE SCENARIO	1.00	16.76
CHRONIC SCENARIO	1.00	16.76

FISH INGESTION EXPOSURE ESTIMATES					
Exposure Units	Results	ASSUMPTIONS			
		ED (years)	AT (years)	BW (kg)	IR (g/day)
Cancer					
LADD _{pot} (mg/kg/day)	0.00	33.00	78.00	80.00	7.50
LADC _{pot} (mg/kg)	0.00	33.00	78.00	NA	NA
Acute					
ADR _{pot} (mg/kg/day)	0.00	NA	1 day	80.00	279.00

Lakes Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

Assessor: Mottl/ENC

ENVIRONMENTAL RELEASES

Scenario#:2

Number of Release Sites: 1.

Release Activity: MFG:Max LADD

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

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Per Site Release:

	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

CHEMICAL ID: P-18-0169

SITE-SPECIFIC HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES: LAKES, BAYS, ESTUARIES, AND OCEANS		
SCENARIO #: 2	RELEASE ACTIVITY: MFG:Max LADD	
FACILITY NAME: LYNN REGIONAL W P C F		
FACILITY LOCATION: LYNN MA 01905		
RECEIVING WATER NAME: ATLANTIC OCEAN		
REACH NUMBER: 01090001013	FACILITY ON REACH: Yes	DISCHARGE TYPE: Direct
NPDES PERMIT #: MA0100552	EXPOSED POPULATION: Adult	

WWT REMOVAL (%)	RELEASE DAYS	PLANT FLOW (MLD)	PRETREAT RELEASE (kg/site/day)	POST-TREAT RELEASE (kg/site/day)	BCF (L/kg)
90.	1.	149.15			0.00

AQUATIC EXPOSURE ESTIMATES		
MIXING ZONE	DILUTION FACTOR	WATER CONCENTRATION (ug/L)
ACUTE SCENARIO	1.00	67.05
CHRONIC SCENARIO	1.00	67.05

FISH INGESTION EXPOSURE ESTIMATES					
Exposure Units	Results	ASSUMPTIONS			
		ED (years)	AT (years)	BW (kg)	IR (g/day)
Cancer					
LADD _{pot} (mg/kg/day)	0.00	33.00	78.00	80.00	7.50
LADC _{pot} (mg/kg)	0.00	33.00	78.00	NA	NA
Acute					
ADR _{pot} (mg/kg/day)	N/A	NA	1 day	80.00	279.00

Lakes Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

Assessor: Mottl/ENC

ENVIRONMENTAL RELEASES

Scenario#:3

Number of Release Sites: .

Release Activity: USE:Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

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Per Site Release:

	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 3

Number of Sites: 1

RELEASE ACTIVITY:USE:Max
ADR

SIC-CODE DESCRIPTION: [REDACTED]

SIC-CODE (S): [REDACTED]

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	1	1	1	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER

PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	1321.81	604.40	403.46	328.18	0.22	0.48	0.72	0.88
ALL	10	44.53	13.72	8.02	7.44	6.49	21.06	36.03	38.84

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES

Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	8.90E-08	2.64E-06	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	6.84E-06	2.03E-04	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	1.81E-05	7.98E-04	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

Assessor: Mottl/ENC

ENVIRONMENTAL RELEASES

Scenario#:4

Number of Release Sites: .

Release Activity: USE:Max LADD

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

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Per Site Release:

	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-18-0169

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 4

Number of Sites: 1

RELEASE ACTIVITY:USE:Max
LADD

SIC-CODE DESCRIPTION: [REDACTED]

SIC-CODE (S): [REDACTED]

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	1.	[REDACTED]	[REDACTED]	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER

PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	1321.81	604.40	403.46	328.18	N/A	N/A	N/A	N/A
ALL	10	44.53	13.72	8.02	7.44	N/A	N/A	N/A	N/A

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES

Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	2.64E-07	7.85E-06	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	2.03E-05	6.04E-04	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	N/A	N/A	mg/kg/day	N/A	N/A	mg/kg/day

SIC Code Comments: